

STERLCO TEMPERATURE CONTROL UNIT

MODEL 6211-E

STERLING, INC.
5200 West Clinton Ave.
Milwaukee, Wisconsin 53223

Please note that our address and phone information has changed. Please reference this page for updated contact information.



These manuals are obsolete and are provided only for their technical information, data and capacities. Portions of these manuals detailing procedures or precautions in the operation, inspection, maintenance and repair of the products may be inadequate, inaccurate, and/or incomplete and shouldn't be relied upon. Please contact the ACS Group for more current information about these manuals and their warnings and precautions.

Parts and Service Department

The ACS Customer Service Group will provide your company with genuine OEM quality parts manufactured to engineering design specifications, which will maximize your equipment's performance and efficiency. To assist in expediting your phone or fax order, please have the model and serial number of your unit when you contact us. A customer replacement parts list is included in this manual for your convenience. ACS welcomes inquiries on all your parts needs and is dedicated to providing excellent customer service.

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Model 6211 Specifications

HEATER — 9000 watts — 3 phase. Low watt density assures long life . . . proper heating characteristics for water. 4500 watt heaters optional.

CONTROL — Single setting thermostat controls both heating and cooling. Large, easily read etched aluminum dial. Full temperature range on one dial . . . 50-250° F. Separate switch for selective heating or cooling with pilot light for each.

PUMPING CAPACITY — 15 GPM @ 20 lb. discharge pressure . . . a true rating at outlet of unit.

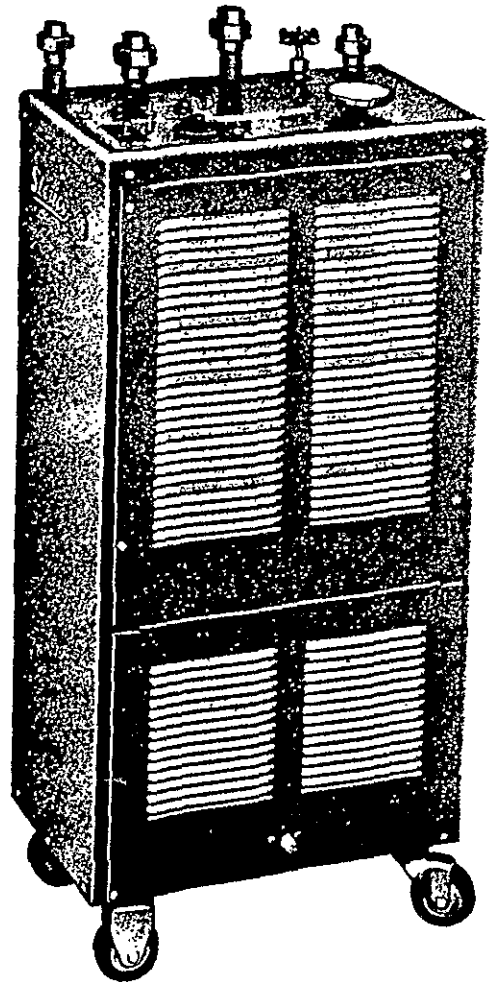
ELECTRICAL — 3/60/220 or 3/60/440 standard . . . other specifications available.

HOSE CONNECTIONS — $\frac{3}{4}$ " delivery and return connections; $\frac{1}{2}$ " water supply and drain connections . . . all at top rear of unit.

STRAINERS — $\frac{1}{2}$ " Y strainer on water supply — $\frac{3}{4}$ " Y strainer on circulation system. Both blow offs piped to drain.

CABINET — Welded steel frame; side covers easily removable; properly louvered for ventilation; overall dimensions of unit 43 $\frac{1}{2}$ " high x 18" wide x 11" deep, with casters.

SHIPPING WEIGHT — 3/60/220 — 220 lbs.;
3/60/440 — 250 lbs.



Sterling inc. 5200 West Clinton Avenue • Milwaukee 23, Wisconsin

Leaders In Temperature Control Equipment since 1916

Other Sterlco Products: STEAM TRAPS • F & T TRAPS • RADIATOR VALVES • THERMOSTATIC RADIATOR VALVES • CONDENSATION PUMPS • TANK AND PROCESS TEMPERATURE CONTROLS • CAST IRON STRAINERS • BRASS STRAINERS

PILOT LIGHTS and selector switches are provided. The pilot lights indicate when the unit is heating or cooling. The selector switches provide the ability to cut out the heating or cooling when one or the other is not needed. Under some conditions this can reduce the consumption of water or electricity. Under other conditions it can help stabilize the temperature swing resulting from a strangulated flow of water.

The control circuit and pump operate on single phase, 220 volt current. In the units built for 220 volt operation this current is taken from two legs of the three phase power supply. In the 3/60/440 volt unit a single phase transformer is provided to furnish single phase 220 volt current for the control circuit and motor.

Provision is made for the operator to make a quick and complete purge of air from the unit, hoses and mold for startup. The air is expelled through the strainer blow-off vent valve by the operator. This unique Sterlco feature, when used, will insure that the unit is properly filled and primed before the pump is started.

Two high capacity Y-strainers are provided, one in the water supply line and one in the water return line, to help keep your entire system clean and to reduce wear resulting from abrasion. These strainers will hold a considerable amount of foreign material before obstructing the flow of water. A blow-off valve, piped to the drain, is provided with each strainer.

Motor protection is provided by a manual starting switch having an electrical overload. This is in addition to the thermal overload which is built inside the motor.

INSTALLATION

To give the user the value he paid for, three important phases of the installation become quite important. First, a safe, well-grounded electrical power connection must be made; secondly, the hoses and fittings must be large enough to allow plenty of water to flow - not just a trickle; and thirdly, a suitable water supply connection must be made so that the unit has an adequate supply of water with sufficient pressure. All three factors serve important functions in giving you safe, efficient and low maintenance operation.

DELIVERY AND RETURN CONNECTION

For your convenience the delivery and return lines are brought out through the top panel to 3/4" female union connections. This makes it possible for you to direct these lines in nearly any direction from the unit.

If hoses smaller than 3/4" are to be used, we suggest you install a tee at the 3/4" union atop the Sterlco and take at least two delivery lines in parallel from that tee. The same would be true of the return line. This is far preferable to one long serpentine of small diameter hose and in many cases this can make the difference between good and poor control.

Since the hoses create resistance to flow and thereby diminish the gallonage to be sent through the mold, we suggest that the hoses be as short as they can be conveniently made, and as large in diameter as possible. Even though the passages in the molds may be small, it is wise to use large hoses and fittings to help minimize the total restriction to flow, for after all, the gallonage being circulated depends on the total restriction to flow.

The sketches on the following pages illustrate hoses and fittings which have been found quite suitable. The hose and fittings which you select must be suitable for the temperature and pressures to be encountered and must permit free flow of water. Quick disconnect fittings which have check-valves in each half should be avoided since the check-valves obstruct flow considerably. In many cases these check-valves can be removed rather simply.

WATER SUPPLY

While appearing simple at the outset, the water supply to the unit is highly important. We recommend a full 1/2" hose without small fittings. We also recommend a usable water supply pressure of at least 20 psig, and preferably 25 lbs., as measured at the unit, if operation over 150°F. is to be conducted. This will keep the circulated water from flashing to steam at the pump inlet, where water

pressure is the lowest in the system. The water supply line should be "ON" whenever the unit is running. Supply pressures over 50 to 60 psi can shorten the life of the unit and while the unit is built for a 125 lb. maximum pressure, it would be well to install a pressure regulator in the supply line if the water pressure is high.

Hard or corrosive water can be damaging to the unit and to your equipment since the unit operates at temperatures which would accelerate these conditions if present. Bad water can also build layers of scale or lime on the heat transfer surfaces of your process and thereby impede production. Since maintenance and downtime are costly, it is well to treat the water supply if that water is bad. In general we can say that people with good water seldom buy parts. Industrial water treatment to minimize this condition is relatively inexpensive, and in many cases is a truly wise investment.

DRAIN

For your convenience two drain openings are provided, one near the top and the other near the bottom. One should be used and the other should be plugged. It is best to have this pass to an open drain where the operator can tell when the unit is cooling, and if the vent and blowoff valves are tightly closed when they are not being used. The drain can also be watched when the unit is blown off to be sure that the unit is properly vented on startup and that the strainers are clear.

If it is not possible to flow to an open drain, the unit may be connected to a closed system as long as a reasonable pressure differential exists between the water supply pressure and the back pressure from the drain.

ELECTRICAL POWER

The brass nameplate attached to the Sterlco unit will indicate the voltage and current requirements. The three conductors of the three phase power supply should be connected to the three contactor terminals which are marked for this purpose. A ground connection is provided and should be used to insure that the unit is positively grounded. In general, the power requirements for this unit are approximately as follows:

	<u>3/60/220</u>	<u>3/60/440</u>
Model 6211	26 amps	15 amps

OPERATION

After all hose, piping, and electrical connections are made, the following sequence of steps should be followed to put the unit into operation. All switches should be off and all manual valves closed before starting.

1. Open fill valve to allow water to enter the unit and fill the circuit through the dies. THIS VALVE SHOULD BE KEPT FULL OPEN.
2. Open the door on the lower part of the front panel and open the valve marked vent blow-off for a period of 2 to 3 minutes to bleed the air from the system. Then close it securely.
3. Turn on the pump switch to start water circulating.

(NOTE: IF EITHER THE PUMPS OR THE HEATERS ARE OPERATED WHEN THE UNIT IS NOT FULL OF WATER, DAMAGE TO THE UNIT MAY RESULT. PLEASE REFER TO PRESSURE SWITCH OPTION UNDER "OTHER STERLCO FEATURES AND UNITS.")

4. Set the thermostat knob at desired temperature and turn on the heater and cooling switches. The heater will operate until the temperature setting is reached, and the heater pilot light will indicate when it is operating. If the thermostat requires recalibrating, this can be done by merely removing the thermostat knob and replacing it to make thermostat dial markings agree with thermometer readings. For recalibrating differential see Bulletin #F43A.
5. STRAINERS. One "Y" strainer is installed in the return line to protect the unit's component parts against dirt in the circulating system, and one 1/2" "Y" strainer is installed in the water supply line to protect the entire unit against foreign matter from that source.

These strainers will hold a considerable quantity of dirt before they start to clog. However, they should be cleaned out daily by simply opening the 3/8" blowoff valves which are piped directly to drain.

6. DRAINING. When the unit is not in use, or if it is to be temporarily exposed to freezing weather, it should be thoroughly drained. After the delivery and return hoses or piping have been disconnected from the unit, remove the pipe plugs in the union tees below the connections of the pump and tank.

TROUBLE SHOOTING

TEMPERATURE FLUCTUATIONS - Overheating and overcooling

While the general reaction is to adjust the thermostat, this fluctuation can most always be traced to poor water flow resulting from one or more of the following conditions:

- A. Small hoses and fittings, or small water passages.
- B. Very long lengths of hose or long serpentine flow of water in and out of the mold in series, rather than in parallel.
- C. Clogged strainer on the return line. The strainer blowoff valve should be used regularly to clean the strainer. In cases of doubt we recommend that the strainer screen be removed and checked.
- D. Blocked water line in the mold. New molds sometimes contain metal chips or other foreign particles inside the water lines. Old molds sometimes contain lime or rust accumulation.
- E. Quick disconnect fittings with check valves (a source of serious obstruction).
- F. Lime buildup in the piping or fittings.

The unit itself can be checked out by the use of a short length of 3/4" or 1/2" hose connected directly from the delivery to the return line. This will provide a condition of very good flow and will establish whether the blockage is in the unit or in the piping. This will also provide a strong indication as to whether a thermostat adjustment is required.

RAPID CYCLING FROM HEAT TO COOL

This condition is traceable to the same causes as the temperature fluctuations indicated above.

UNABLE TO PROPERLY HEAT

When the water temperature will not rise above a certain temperature, the cause can generally be traced to a continuous loss of water from the system (allowing cooling water to enter). This can be checked by observing the drain. The operator should check to be sure that the blowoff valves are closed and are not leaking. Under some conditions it is possible to have the valve closed on a particle of grit which, of course, will allow the valve to continuously leak. The same is true of

the solenoid valve which is used for the cooling control. This solenoid valve can be flushed out easily by having the operator run the thermostat dial up and down several times to open and close the solenoid. Another cause could be traceable to a leaking hose or fitting somewhere else in the system. It is also possible that the immersion heater might be inoperative or defective, and most any competent electrician can check this out readily.

UNABLE TO COOL

In order to cool, the unit must discharge water to the drain and simultaneously allow tap water to enter. Therefore, if your unit does not provide cooling, the following steps should be checked to help locate the cause.

1. Check to see if water flows to the drain when the cooling pilot is "on".
2. Check to see that the water supply or fill valve is opened and allowed to remain open at all times while the unit is in operation.
3. Check the solenoid valve for proper operation.
4. Check the strainer screen on the water supply line. We would suggest that you use the blow-off valve to blow down the strainer and if there is any doubt as to the condition of the strainer, then it would be well to remove the strainer screen and clean it as required.
5. Perhaps it might be well to check the water supply pressure to be certain it hasn't dropped. Please refer to "Erratic Operation at Temperatures Over 150 F."
6. A high pressure from the drain could easily cause a limited ability to cool, since the unit depends upon the pressure differential between the water supply and drain for the amount of cooling which it can provide.

ERRATIC OPERATION AT TEMPERATURES OVER 150 F.

Under some conditions the unit can call for cooling and provide a continuous flow of water to the drain, but the temperature will stay unchanged until a sharp drop of 20 to 50 degrees takes place. The process will then start over. This condition is directly traceable to a low water supply pressure and should not be allowed to continue because serious damage to the unit will likely result. The installation instructions with regard to the water supply should be checked promptly to be certain that the unit has an adequate supply of water, under the proper pressure.

HEATER BURN-OUT

A direct visual indication of heater burn-out is the presence of scorched or discolored paint on the heater tank. In most cases the water level inside the tank at the time of burn-out can be determined because the paint on the exterior of the tank below the water level will not be scorched. Causes of heater burn-out are generally traceable to -

1. The unit not being filled with water before startup
2. A condition of low water supply pressure as described above under the heading of "Erratic Operation at Temperatures Over 150°F"
3. A faulty heater
4. A plugged system or generally obstructed flow.

PUMPS AND SEALS

Before leaving our factory each unit is operated for some considerable period of time, and calibrated. After this test the unit is drained and blown out with warm air to remove most of the water from the piping system. If the unit is allowed to sit for a long period of time before being installed in your factory, the housing gaskets at the pump can dry out and will possibly leak when the unit is started. In many cases these gaskets soon swell and form a tight seal, while in other cases it may be necessary for you to make a partial turn on the pump screws.

In some cases it is possible to have the pump seal surfaces separate slightly because of rough handling or considerable vibration during transit from our plant to yours. This, of course, would cause a leak at the seal when the pump is started, and in most cases the surfaces will mate again after the pump is allowed to run for a short period of time. If they do not mate you may find it necessary to open up the pump and free the seal by hand. It is seldom necessary to install a replacement seal in a new unit unless the unit has been started without water.

Our pump seals should give a long period of service life. There are conditions of course which tend to shorten the seal life, such as the presence of grit, operation of the unit without water, sustained high water temperatures, or the presence of certain chemicals in the water. When installed properly our J-81-E bronze and carbon seal gives very good service life with good water conditions. Our ceramic and carbon type seal, J-81-H, has been developed to resist abrasive tendencies which we find present in many water systems. The J-81-H is the seal which is installed in our unit when new. Should you have need to operate your Sterlco continuously at elevated temperatures, we would suggest the J-81-K, which has high temperature components. All of these seals can be destroyed rather easily if the unit is run without water.

After the unit has been in service for a period of years and particularly where abrasive conditions are present, you may find that the pump casting which is designated as our "bracket", can be eroded away in the area around the seat of the rotary seal. This area should provide a straight, smooth surface against which the O-ring of the seal seat should bear. Should your casting show signs of erosion in this area, we would strongly recommend that the casting be replaced, since the replacement cost of the casting is a very modest investment when compared with down-time and maintenance cost for replacing a seal which has been installed in a worn out pump. A small puddle underneath the unit is a sign of rotary seal wear and if your investigation confirms the pump as the source of the leak, we would recommend that the seal be replaced as soon as practical. If allowed to leak, the water will eventually find its way to the lower motor bearing and cause further damage. The water slinger is intended to provide temporary protection against this possibility, but a continued and substantial leak will undoubtedly ruin the motor bearings.

Even though your maintenance people may have had years of experience in dealing with pumps in general, we would strongly suggest that they follow our form I-4100-E1 when overhauling the pumps. Careful attention to these instructions will help assure a proper installation and minimum down-time.

Under some conditions users find that the pump will not start. After turning off the power supply it would be well to check the motor shaft to be certain that it is free to turn. By removing the drip cover atop the motor, access is provided to the end of the shaft, which has been slotted so that it might be turned with a screwdriver. If the shaft is found free to turn, we would suggest that the power supply to the unit be checked on all legs to be certain that power is available to the motor. If these two items have been checked, we would then recommend that a competent electrician be called upon to check the motor and its circuit.

THERMOSTAT CALIBRATION

Each Sterlco unit is operated for a considerable time at our plant and is carefully calibrated and checked as part of our final test. However, the unit can arrive with a thermostat out of calibration because of a rough ride or rough handling in transit. Also, the thermostat can come out of calibration after a long period of service, and it is helpful therefore to reset the dial. The best method of correction is to loop a short length of 1/2 or 3/4 inch hose between the delivery and return lines (to insure good water flow) and to bring the water temperature to mid-scale, where it should be allowed to stabilize. By loosening the set screw of the thermostat dial, the dial can then be set to agree with the temperature being maintained on the thermometer.

THERMOSTAT ADJUSTMENT

Under some conditions it may be necessary to adjust the span between heating and cooling. However, before starting this adjustment the operator should check to see that the unit has proper water flow (see Temperature Fluctuation under 'Trouble Shooting'). The calibration can be accomplished by first removing the thermostat dial which exposes the positioning screws of the thermostat. Refer to form F43A for illustration. By adjusting only the switch on your left as you face the unit, the temperature tolerance can be set to any desired amount. Do not attempt to work both positioning screws. After this adjustment has been made the dial can be replaced and reset.

STERLCO PARTS LIST

PARTS LIST 101
Revision 11
January 19, 1981

<u>PART NUMBER</u>	<u>DESCRIPTION</u>
081-00024	Rotary seal - ni-resist and carbon
545-00001	Housing gasket - 1 required per pump
R-150-FC	Temperature control (cooling) valve, specify range and capillary length
724-00033	Thermoswitch, specify range (6002, 6012, 6015, 6022, 6031)
724-00025	Thermostat (6210, 6211, 6221, 6231, 6111-C, 6121-C, 6131-C)
162-00012-05	Thermostat ass'y. (bulb, capillary & plunger) only for above
162-00012-03	Microswitch (RR 441) heat
162-00012-04	Microswitch (GR 441) cool
162-00012-06	Dial and knob assembly for 724-00025 only
147-00004	Thermoswitch pointer for 724-00033 thermostat only
037-00004	Thermometer (6012, 6015, 6022, 6031)
037-00009	Thermometer (6210, 6211, 6221, 6231, 6111-C, 6131-C, 6121-C) (above with fittings)
722-00051-08	230 volt immersion heater, 9000 watt, 3 ph. threaded type
722-00051-09	460 volt immersion heater, 9000 watt, 3 ph. threaded type
722-00051-10	230 volt immersion heater, 4500 watt, 3 ph. threaded type
722-00051-11	460 volt immersion heater, 4500 watt, 3 ph. threaded type
722-00051-12	550 volt immersion heater, elect. 9 KW, 3 ph. threaded type
722-00051-16	208 volt immersion heater, 9000 watt, 3 ph. threaded type
717-04001	Heater switch - cooling switch
715-10025	Pilot light receptacle (red lens)
715-10026	Pilot light receptacle (amber lens)
715-02001	Pilot light bulb
729-00012	Contactor, size 1
729-00011	Contactor, size 0
682-02878-04	Transformer 460/230/115 volt, 1 KVA with conversion kit
733-00006	Pressure switch less adaptor (A-B)
044-00149	Pressure relief valve 1/2"
573-00004	Screen for 1/2" and 3/4" strainers
720-09026	Single phase motor, 1/2 HP
720-09026-02	Single phase motor, 1/2 HP, General Electric
720-09027	Three phase motor, 1/2 HP TENV (Delco G.E.)
605-00007-02	Complete pump and motor ass'y. 1/2 HP, single phase
605-00007-05	Complete pump and motor ass'y. 1/2 HP, 3 ph., TENV (Adjust for G.E. & Delco)
695-16119-01	Motor & impeller ass'y., single phase 1/2 HP
695-16119-03	Motor & impeller ass'y., 3 ph., 1/2 HP TENV (Adjust for G.E. & Delco)
044-00041	Vent priming cock
001-06850	Impeller screw
542-10404-00	Water slinger
615-13341-01	Bracket E - per Form I-4100-EI
615-14921-00	Volute A - per Form I-4100-EI
615-14951-00	Volute B - per Form I-4100-EI
695-13359-00	Impeller, standard brass
726-00030	Pump starting switch, less element
731-00011	Heater element for pump start switch (specify amp rating)
106-00002	Heat exchanger 3.7 sq. ft. (6111, 6121, 6131)
732-00020	Solenoid valve 1/4" (6210, 6211, 6221, 6231)
732-00011	Solenoid valve 1/2" (6111-C, 6121-C, 6131-C)

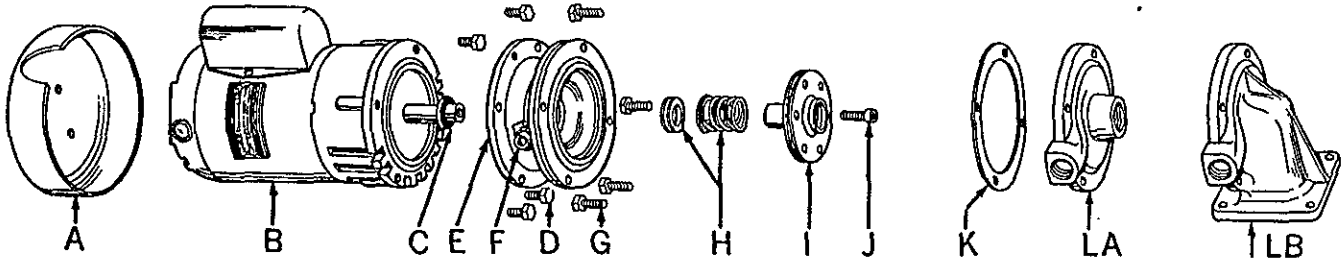
REPLACING ROTARY SEAL ASSEMBLY ON STERLCO PUMP AND MOTOR

PARTS

A. Drip Cover
B. Motor
C. Water Slinger
D. Motor Screws

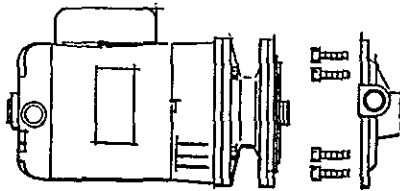
E. Bracket
F. Prime Cock
G. Pump Screws
H. Rotary Seal Assembly

I. Impeller
J. Impeller Screw
K. Housing Gasket
L. Volute - A or B

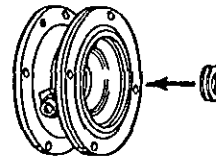


Step No. 1 — Dis-assembling (Removal of old seal assembly)

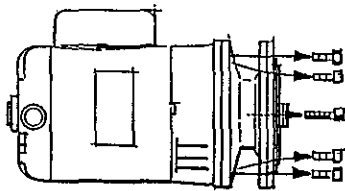
Step No. 2 — Re-assembly (Installation of new seal assembly)



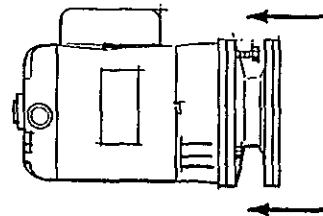
a) Remove volute from motor bracket and impeller assembly by removing pump screws.



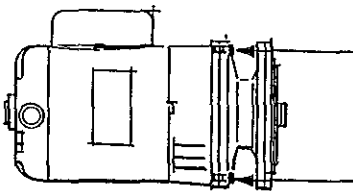
f) Coat outside edge of new seal with 3% detergent solution and slip it into the bracket. Press into bracket with thumbs or wooden dowel. Handle seat carefully so seating surfaces are not scratched or chipped . . . be sure it is squarely seated.



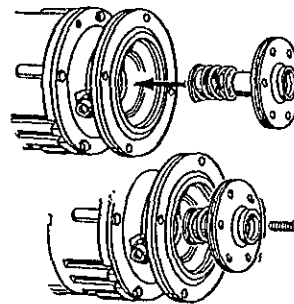
b) Remove impeller screw and motor screws. (Note: opposite end of motor shaft is fitted with screw driver slot to hold shaft securely while impeller screw is being removed. Drip cover must be removed to get at screw-driver slot).



g) Remount bracket on motor.

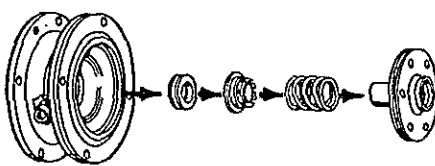


c) Insert two of the pump screws into the two threaded holes in the bracket. Tighten them slowly and evenly to force the impeller and bracket off the shaft. Do not pry the impeller or bracket!



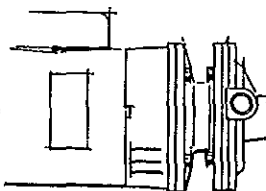
h) Lubricate impeller hub. * 3% detergent solution . . . slip new bellows and spring onto impeller hub. Be sure bellows slides freely on impeller hub.

i) Replace impeller on motor shaft extension and secure with impeller screw. Hold shaft with screw driver slot while tightening screw.



d) Remove old seal parts from impeller hub and bracket. Be sure water slinger is in place.

e) Clean impeller hub thoroughly . . . remove all loose particles of dirt, grease, etc. Use fine emery cloth if necessary. Also clean the recess in the bracket so the new seat will fit perfectly. Remove all particles and dirt on gasket surfaces of the two castings.



j) Replace volute onto bracket, using new housing gasket. Use one gasket for condensate pump and for temperature control units. Secure with pump screws. Be certain gasket is seated properly.

NOTE: When ordering parts please indicate pump model number and serial number.

STERLING, INC. 5200 W. Clinton Ave., Milwaukee, Wisconsin 53223

STERLING, INC.
PARTS LIST (D-G)
STERLCO PUMP 1 TO 3 HP

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
O	001-05915	Motor Screw, (4) Required
P	542-10404	Water Slinger
O	615-00001	Bracket
R	081-00024	Rotary Seal Assembly
S		Impeller-specify part no. and diagram (See pump nameplate)
T	525-00001	Lock Washer
U	535-00001	Impeller Nut
V	545-00002	Housing Gasket
W-A	615-00003	Threaded Inlet Casting
W-B	615-00002	Tank Inlet Casting
X-A	001-05915	Pump Screw for pump w/threaded suction (8) required
X-B	001-05915	Pump Screw for pump w/tank suction (6) required
X-B	001-05923	Pump Screw for pump w/tank suction (2) required

(Above parts illustrated on Form MP-1)

M-160-00005	Motor Drip Cover (**)
N-720-09003	Electric Motor 1 HP - 3/60/230-460V Open (#)
N-720-09009	Electric Motor 1 HP - 3/60/230-460V TEFC (#ç)
N-720-09004	Electric Motor 1-1/2 HP - 3/60/230-460V Open (#)
N-720-09010	Electric Motor 1-1/2 HP - 3/60/230-460V TEFC (#ç)
N-720-09005	Electric Motor 2 HP - 3/60/230-460V Open (#)
N-720-09011	Electric Motor 2 HP - 3/60/230-460V TEFC (#ç)
N-720-09006	Electric Motor 3 HP - 3/60/230-460V Open (#)
N-720-09012	Electric Motor 3 HP - 3/60/230-460V TEFC (#ç)

**Used only on drip proof motors

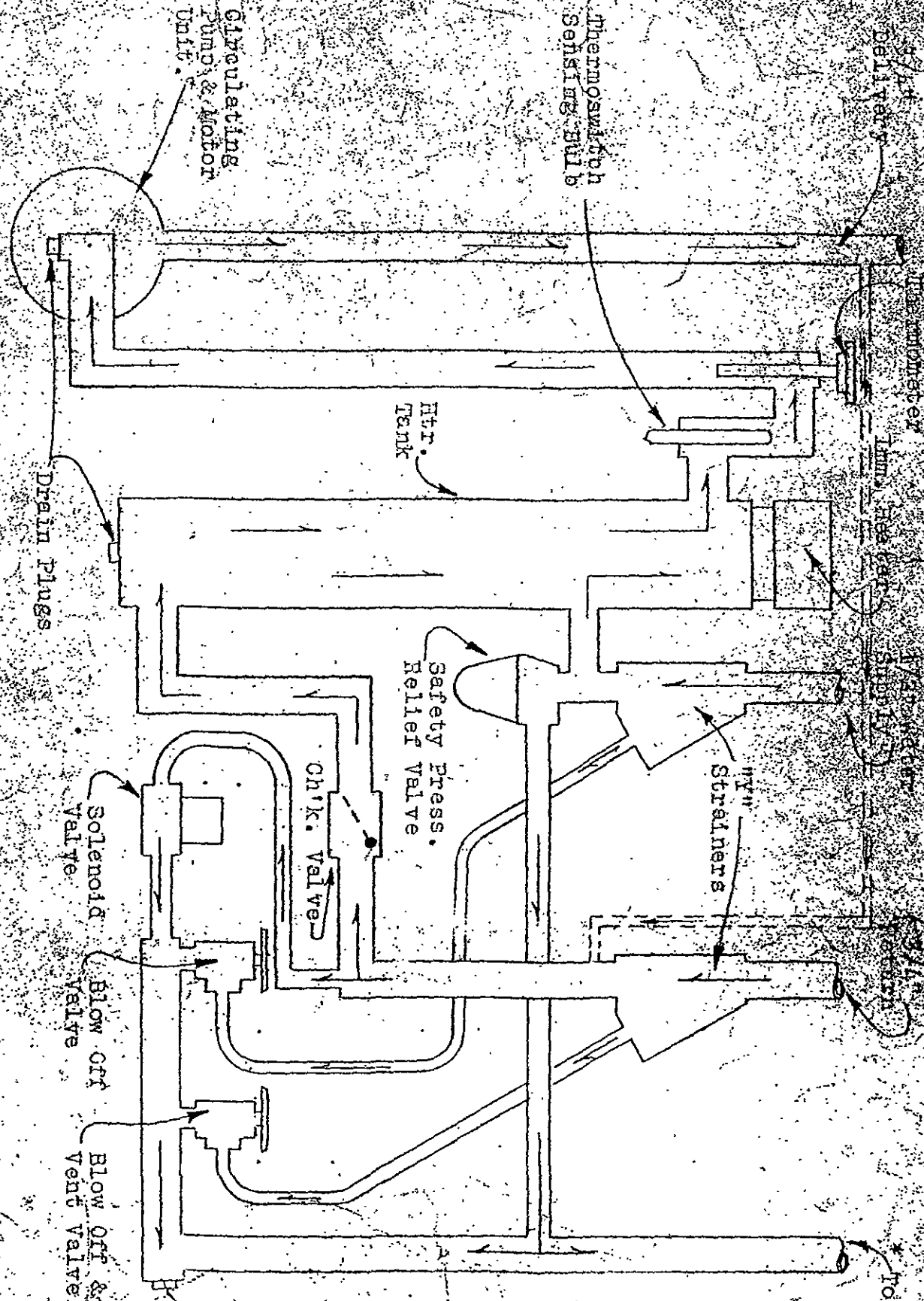
* State Motor Manufacturer

State Motor Manufacturer if preferred

ç State special specification (i.e. 7EQ-Spec., 7E-Spec., etc.)

Sterling part numbers apply to non-special motors. Consult Parts List in your unit manual for specific motor requirements.

NUMBERS OTHERWISE SPECIFIED USE: IF .003" FOR DECIMAL DIMENSIONS; IF .003" FOR FRACTIONAL DIMENSIONS



Use of Side Drain May Be Used. The Operating Not Used.

STERLING INC.
MILWAUKEE, WIS.

TITLE SHEET
Schematic of Equipment

FOR THE FOLLOWING UNITS:			
6211-B	6213-B	6214-B	
6211-D	6213-C	6214-C	
6211-E	6213-E	6214-D	
DR	CHK	DATE	SCALE
		9-3-54	NONE
			ISSUE
			2
			DRG. NO.
			14928

STERILCO PARTS LIST

Part List 101
 Rev. 10
 March 31, 1980

<u>PART NO.</u>	<u>DESCRIPTION</u>
081-00024	Rotary seal - ni-resist and carbon
545-00001	Housing gasket - 1 required per pump
F-150-FC	Temperature control (cooling) valve, specify range and capillary length
724-00033	Thermoswitch, specify range (6002, 6012, 6015, 6022, 6031)
724-00025	Thermostat (6210, 6211, 6221, 6231, 6111-C, 6121-C, 6131-C)
162-00012-05	Thermostat Ass'y. (bulb, capillary & plunger) only for above
162-00012-03	Microswitch (RR 441), heat
162-00012-04	Microswitch (GR 441), Cool
162-00012-06	Dial and knob assembly for 724-00025 only
147-00004	Thermoswitch pointer for 724-00033 thermostat only
037-00084	Thermometer (6012, 6015, 6022, 6031)
037-00009	Thermometer (6210, 6211, 6231, 6111-C, 6131-C, 6121-C) above w/fitting *
722-00051-08	230 volt immersion heater, 9000 watt, 3 ph., threaded type
722-00051-09	460 volt immersion heater, 9000 watt, 3 ph., threaded type
722-00051-10	230 volt immersion heater, 4500 watt, 3 ph., threaded type
722-00051-11	460 volt immersion heater, 4500 watt, 3 ph., threaded type
722-00051-12	550 volt immersion heater, electric 9 KW, 3 ph., threaded type
722-00051-16	208 volt immersion heater, 9000 watt, 3 ph., threaded type
717-04001	Heater switch - cooling switch
715-10025	Pilot light receptacle (red lens)
715-10026	Pilot light receptacle (amber lens)
715-02001	Pilot light bulb
729-00012	Contactator, size 1
729-00011	Contactator, size 0
682-01419-01	Transformer 460/230/115 volt, 1 KVA with conversion kit
733-00006	Pressure switch less adaptor (A-B)
044-00149	Pressure relief valve 1/2"
573-00004	Screen for 1/2" and 3/4" strainers
720-09026	Single phase motor, 1/2 HP
- 720-09026-02	Single phase motor, 1/2 HP, General Electric
720-09027	Three phase motor, 1/2 PH, TENV (Delco, G.E.)
- 605-00007-02	Complete pump and motor ass'y., 1/2 HP, single phase
605-00007-05	Complete pump and motor ass'y., 1/2 HP, 3 ph., TEVN (Adjust for G.E. & Delco)
695-16119-01	Motor & impeller ass'y., single phase 1/2 HP
695-16119-03	Motor & impeller ass'y., 3 ph., 1/2 HP TENV (Adjust for G.E. & Delco)
044-00041	Vent Priming cock
001-06850	Impeller Screw
542-10404	Water slinger
615-13341-01	Bracket E - per Form I-4100-EI
615-14921	Volute A - per Form I-4100-EI
615-14951	Volute B - per Form I-4100-EI
695-13359	Impeller, standard brass
726-00030	Pump starting switch, less element
731-00011	Heater element for pump start switch (specify amp rating)
106-00002	Heat exchanger 3.7 sq. ft. (6111, 6121, 6131)
732-00020	Solenoid valve 1/4" (6210, 6211, 6221, 6231)
732-00011	Solenoid valve 1/2" (6111-C, 6121-C, 6131-C)

STERLING, INC., 5200 West Clinton Avenue, Milwaukee, Wisconsin 53223

* Should also include Model 6221.